GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

WR Department –"Integrated Water Management" submitted under "Empanelment of companies for developing innovative products/services/ solutions - Confirmation regarding Location, Payment Schedule, Payment Milestones and Terms of Payment for proposal from Vassar Labs – Orders issued in G.O.Rt.No.113, dated 24-08-2015 of ITE &C Department – Administrative Sanction – Accorded.

WATER RESOURCES (WRG:GRC) DEPARTMENT

G.O.RT.No. 667 Dated:14-10-2015

Read the following:-

1. From the M/s Vassar Labs IT Solution Pvt. Ltd., Hyderabad representation date. Nil
2. G.O.Rt.No.113, ITE&C (Promotion) Dept., dated 24-08-2015.

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ORDER:-

In continuation of orders issued by the Information Technology, Electronics & Communication (Promotion) Department, in the G.O. 2nd read above, the following clarifications are issued herewith:

1. Locations where the sensors will be installed are identified in Section A "Locations for Sensor Installation". The Engineer-in-Charge can change these locations based on the field conditions
2. Payment Schedule, Payment Milestones and Terms of Payments are as per the attached Section B "Payment Schedule".
3. M/S Vassar Labs will take sufficient precautions and ensure that the devices are properly maintained in the field. M/S Vassar Labs software will monitor the solution and report when the devices are not functioning or stolen. M/S Vassar Labs will ensure that any damage or stolen devices are reported immediately to the Department.
4. The project should be accounted for under the Head of Account "Krishna Delta Modernization works "4700 – 01 -136 – 11 -27 – 530 – 531 and the Water Resources department should get the funds reimbursed from ITE&C Department as per G.O.RT.No.113. dated 24-08-2015.

The list of locations in Krishna Canal as well as Thungabhadra Lower Canal System as per survey of shown in **Annexure** of this Order.

The ENC (AW/IW), A.P./C.E., KDS, Vijayawada, Krishna District and the Director, Ground Water Department shall take necessary action accordingly.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

SHASHI BHUSHAN KUMAR
PRINCIPAL SECRETARY TO GOVERNMENT (I/c)

To
The Engineer-in-Chief (AW/IW), A.P.
The Chief Engineer, Krishna Delta System, Vijayawada, Krishna District
The Director, Ground Water Department, A.P., Hyderabad.

Copy to

The Information Technology, Electronics & Communication (Promotion) Department
M/s.Vassar Labs IT Solution Pvt.Ltd.,
50-96-12/8, TPT Colony, Seetammadhara
Visakhapatnam, AP 530013.

//FORWARDED: BY ORDER//

SECTION OFFICER

(ANNEXURE TO G.O.RT.No. 667, WR (WRG:GRC) DEPT., DATE :14 -10-2015.)

Section A. Locations for Sensor Installation

Krishna River Canal System

S. No	Krishna River Canal System
1	KW Main
2	K E Main
3	Bandar Regulator
4	Ryves Regulator
5	Eluru Regulator
6	Yanamalakuduru Downstream – Bandar Direct Regulator
7	KE Bank Regulator at Yanamalakuduru Locks
8	East Side channel – Upstream at Nidumolu Locks
9	East Side Channel at Pamarru (Head Sluice) – Upstream
10	Akumarru Lock– Downstream
11	Nidumolu Lock– Downstream
12	Valluripalem lock – Downstream
13	Nimmagadda lock – Downstream
14	Puligadda Left Flank Regulator
15	Veeranki locks – Downstream
16	Revendra padu Locks on KW Bank Canal
17	Duggirala lock
18	East Side Channel near Duggirala Locks
19	West Side Channel near Duggirala Locks
20	Nizampatnam Canal near Duggirala Lock
21	Nose Guage
22	Jagarlamudi Lock
23	Kollimara lock
24	Nallamada Lock
25	Balliparru lock –Upstream
26	Balliparru Lock – Downstream
27	Marrivada Lock–Upstream
28	Marrivada Lock Downstream
29	Komatigunta Lock – Upstream level
30	Komatigunta lock – Dosapadu at Downstream of the

	locks
31	Bantumilli Lock –Upstream
32	Campbell canal – at flume
33	Polaraju canal

Total Sensors in Krishna River Canal system: 33

Tungabhadra River Canal System

S. NO	Tungabhadra LLC
1	AP Border Gauge Point
2	Border of Sub-division 1 and Sub-division 2
3	Border of Sub-division 2 and Yemmiganur
4	DCR (Drop cum regulator)
5	Gudekal Tank
6	KBC
7	Madhavaram Major
8	Suguru Major
9	Tail Dam
10	Gundrevula

Total Sensors in Krishna River Canal system: 10

Based on the inputs from the irrigation officials and the field conditions, the actual locations can be determined and changed if required.

Section B. Payment Schedule

Project Cost

The cost of the proposed project is broken down into the following main components:

1. ***Canal Monitoring System:*** This includes all the components required to install and measure canal flow and levels.
2. ***Cloud Enabled Remote Data Monitoring Unit with Solar Backup:*** This includes all the components required to capture the data from the sensors, FOG processing, store & forward data to the cloud and monitor sensor performance with weather proof casing and solar backup
3. ***Cloud Based Integrated Water Management System:*** This is a cloud-based solution to provide real-time Integrated Water Management. This system will capture data from each sensor node, provide decision-support analytics and integrate into Government systems. This system will also perform continuous monitoring of all sensor nodes. System cost will cover
    - All required software licenses

- Annual Maintenance of all hardware components including the sensors, data capturing units and solar power backup. There will be three field maintenance visits per year
- Network cost to transmit data to the cloud in real-time
- Software support resources to maintain the system, along with a program manager who acts as a single point of contact for the Government

4. ***Software Deployment, Customization and Integration:*** Software delivery involves:
    - Real-time Water Management Dashboard
    - Integrating the data received from Cloud Enabled Remote Data Monitoring Unit into CM's dashboard
    - Working with Irrigation department, Ground Water Department and other relevant departments to develop the Water Balance Sheet
    - Integrate data from Ground Water, Canal, Reservoir, and Rainfall to create dashboard and Analytics System with Decision support.
    - Exception based alerting

Detailed Project Cost

S. No	Description	Quantity	Unit Cost (Lakhs)	Total Cost (Rs. Lakhs)
	Hardware Systems			
	Canal Monitoring System			
1	Krishna Canal (33 Flow and Level Monitoring)			
	Flow and Level Measurement Unit	33	2.5	82.5
2	Tungabhadra Lower Level Canal (10 Flow and Level Monitoring)			
	Flow and Level Measurement Unit	10	2.5	25.0
3	Cloud Enabled Remote Monitoring Unit with Solar Backup	43	2.0	86.0
	Total Hardware Systems Cost			**193.5**
	Systems			
4	Program Management Cost			50.0
5	Ground Water, Canal, Reservoir, and Rainfall dashboard and Analytics System			60.0
6	Rain water integration, Integration of			25.0

	Historical data of Canals, Reservoirs, GW			
7	Water Balance Sheet, Integration into CM Dashboard			40.0
	Total Systems Cost			**175.0**
8	Cloud Based Integrated Water Management System (Rs 150/sensor/day)			
	Annual charge for Cloud Based Integrated Water Management System	43	Rs 150/day	23.5
9	Admin & misc. Charges			56.5
	Taxes			49.4
	Total Cost (in rupees lakhs)			**498.0**

Total project cost: Four Crore Ninety Eight Lakhs only.

(*) The taxes shown include VAT at the rate of 5% and CST at the rate of 2% for the hardware components and service tax at the rate of 14% for the services components. Any changes in the tax rates will change the taxes to be charged.

(*) Current quote does not include the cost of civil works. The Irrigation department will take up the cost of civil works.

Payment Milestones

Milestone	**Period of Milestone**	**Description of Work**	**Value of Work**
Milestone 1	3 Months	Delivery of goods (Hardware) to the water resources department and submission of manufacturer's certificate that the equipment works as per factory testing.	174.15 Lakhs
Milestone 2	2 Months	Final installation of hardware at each location. Appropriate invoice will be given for the successfully accepted locations.	19.35 Lakhs
Milestone 3	2 Months	Go Live of Cloud Visibility Solution or using the solution for Water Resources Department Command Center.	231.5 Lakhs
Milestone 4	1 Month	Integration of real time Sensor Data with CM Dash Board.	23.5 Lakhs
	Taxes applicable (CST, VAT, Service Tax)		49.4 lakhs
	Total		498 Lakhs

Terms of Payment

Hardware Systems:

Payment Milestone	Payment	Bank Guarantee
Initial Payment (Hardware)	30% of the total hardware systems cost (fifty eight lakh five thousand rupees) upon receipt of work order and submission of invoice.	Bank guarantee for the same amount 58.05 Lakhs (fifty eight lakh five thousand rupees) to be submitted by obtained from a scheduled bank to be for 8 months (agreement term)
Hardware Delivery Payment (Milestone 1)	On supply of Hard Ware instruments and manufacturer certificate, 90% of the cost of Hardware systems including taxes applicable subject to adjustment of mobilization advance (equivalent to 30%) paid and outstanding against the contractor.	The original Bank guarantee furnished at the time of drawal of advance (equivalent to 30%) will be released upon delivery of goods to the water resources department along with manufacturer's certificate that the equipment is as per factory testing.
Final Acceptance (Milestone 2)	10% of the total hardware cost (remaining portion) will be paid upon acceptance of hardware at that location. Invoice will be submitted for locations where the hardware is accepted by the department.	Vassar Labs will issue a new Performance Bank Guarantee of 10% (Nineteen lakh thirty five thousand rupees) of total hardware systems costs (excluding taxes). This Bank Guarantee will be released 12 months after moving system into production

Systems & Admin Charges:

Payment Milestone	Payment	Bank Guarantee
Initial Payment (System & Admin Charges)	40% of the total Systems and Admin costs and applicable taxes (One Crore five Lakh Fifty Six Thousand only) upon receipt of work order and submission of invoice, shall be paid as a mobilization advance	Bank guarantee for the same amount (One Crore five Lakh Fifty Six Thousand Rupees only) to be submitted by the agency obtained form a scheduled bank valid upto 8 months(agreement term) towards security for mobilization advance.
Cloud based	70% of the total System and	Bank guarantee produced for drawal of

visibility (Milestone 3)	Admin costs and applicable taxes will be paid upon demonstrating cloud-based visibility of sensor data (Even if only a subset of sensors are installed by this time) subjected to recovery of 40% mobilization advance drawn	mobilization advance will be released on payment of 70% of the total system and admin costs.
Integration with CM Dashboard (Milestone 4)	20% of the total System and Admin costs and applicable taxes (Fifty Two Lakh Seventy Eight Thousand Rupees) will be paid upon integration of real time sensor data with CM Dashboard	
Final Acceptance (System & Admin Charges)	10% of the total Systems and Admin costs and applicable taxes (remaining portion – approximately Twenty Six Lakhs Thirty Nine Thousand Rupees) will be paid upon Go Live of Cloud Visibility Solution or using the solution for Water Resources Department Command Center, submission of the project report and submission of an invoice	Contractor will issue a new Performance Bank Guarantee of 10% of total Systems costs (excluding taxes) (Seventeen Lakh Fifty Thousand Rupees). This Performance Bank Guarantee will be released 12 months after moving system into production

Cloud Based Integrated Water Management System:

- Annual Fees along with all application taxes (Twenty Six Lakh Seventy Nine Thousand Rupees) needs to be paid upfront before go live of cloud visibility solution or using the solution for command center for Water Resources Department.